

**Notice of Allowability**

Application No.

10/606,665

Examiner

Parikha S. Mehta

Applicant(s)

FAYAD ET AL.

Art Unit

3737

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the RCE of 11/16/07 and the claim amendments and arguments submitted 8/10/07.
2. ☒ The allowed claim(s) is/are 1-9.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 11/11/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT AND REASONS FOR ALLOWANCE

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10 August 2007 has been entered.

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Applicant's representative, Sivananda Reddy, on 16 January 2008. The application has been amended as follows:

1. (Currently amended) A method of magnetic resonance imaging of blood vessel walls, comprising

administering a series of DIR preparation pulse modules at a repetition interval short enough that at least two DIR preparation pulse modules occur within each RR ~~a repetition time interval for a slice~~;

in the interval between each DIR preparation pulse module, acquiring image data for a plurality of slices; ~~and~~

repeating the data acquisition across a plurality of RR intervals ~~a plurality of repetition time intervals for a slice~~ to acquire images for the plurality of slices[.]; and  
generating an output based on the images.

2. (Original) The method of claim 1 wherein the repetition interval for the administered DIR modules is less than about 500 msec.

3. (Currently amended) The method of claim 1 wherein ~~the~~ an inversion time  $TI_0$  is less than about 190 msec.

4. (Original) The method of claim 1 wherein image data acquisition extends across an interval that begins before and ends after the inversion time  $TI_0$ .
5. (Original) The method of claim 4 wherein image data acquisition occurs in an interval when longitudinal magnetization of blood is reduced to at least 10 percent of full longitudinal magnetization.
6. (Original) The method of claim 1 wherein image data acquisition is cardiac triggered.
7. (Original) The method of claim 1 wherein image data acquisition is untriggered.
8. (Original) The method of claim 1 wherein the DIR modules comprises an inversion pulse followed by a reinversion pulse, and the reinversion pulse reinverts a plurality of the slices to be imaged.
9. (Original) The method of claim 8 wherein the DIR modules consist of an inversion pulse followed by reinversion pulse that reinverts all of the slices to be imaged.

3. The following is an examiner's statement of reasons for allowance: The closest prior art of record, Song et al (Multislice Double Inversion Pulse Sequence for Efficient Black-Blood MRI. *Magnetic Resonance in Medicine*. 47:616-620. 2002.), entered by Applicant on 16 November 2007, does not fairly teach or suggest a black blood imaging method wherein at least two DIR preparation pulses occur within an RR interval. Song (2002) only broadly teaches methods for acquiring multiple slices of image data for a single DIR sequence, but does not teach or suggest that the reference method may acquire during a single cardiac cycle. In fact, Song (2002) makes no particular mention of synchronization or comparison of the imaging sequence to the patient's cardiac cycle at all. Accordingly, the present invention is found to be patentable.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parikha S. Mehta whose telephone number is 571.272.3248. The examiner can normally be reached on M-F, 8 - 4:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Parikha S. Mehta

Examiner – Art Unit 3737



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